

What is claimed is:

- 1) Tooling for the fabrication of composite materials comprising a carbonaceous foam having a density of between about 0.10 and about 0.80 g/cm³, a coefficient of thermal expansion of between about 0.5 and about 6.5 and a thermal conductivity below about 1.
- 2) The tooling of claim 1 wherein said carbonaceous foam is pitch-based or coal-based.
- 3) The tooling of claim 2 wherein said carbonaceous foam is a semi-crystalline, largely isotropic, porous coal-based product produced from particulate coal exhibiting a free swell index of between about 3.5 and about 5.0.
- 4) The tooling of claim 3 wherein said coal exhibits a free swell index of between about 3.75 and about 4.5.
- 5) The tooling of claim 2 having a compressive strength below about 6000 psi.
- 6) The tooling of claim 2 wherein said carbonaceous foam has been carbonized.

- 7) **The tooling of claim 2 wherein said carbonaceous foam has been graphitized.**
- 8) **The tooling of claim 1 further including a facesheet of a dissimilar material coated thereon.**
- 9) **The tooling of claim 1 wherein the density of said carbonaceous foam varies in density throughout the mass thereof.**

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